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09/823,296	03/29/2001	Richard B. Greenwald	213.1127-U	6827

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EXAMINER

DESAI, ANAND U

ART UNIT

PAPER NUMBER

1653

DATE MAILED: 09/12/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**FILE COPY****Office Action Summary**

Application No.

09/823,296

Applicant(s)

GREENWALD ET AL.

Examiner

Anand U Desai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 3, 5, 9-11, and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: Page 15, line 14 recites a trademark product. The use of the trademark (TAXOTERE<sup>TM</sup>) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

### *Claim Objections*

2. Claims 3, 9, 10, and 11 are objected to because of the following informalities: Claim 3 is missing a period. Claims 9-11 do not have units specified as daltons or kilodaltons. Claims 5, and 14 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

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which applicant regards as the invention. In claim 1, the use of "or" in the Markush group of substituents for E<sub>1-4</sub>, E<sub>1a-3a</sub>, and E<sub>1b-3b</sub> raises the question of what group is being selected? Is it that one group is all substituents prior to the "or" and the other group is the substituent after "or"? The use of "and" in place of "or" would clearly define the groups to be selected. In claim 16, the R<sub>11b</sub> group is undefined. Appropriate correction is required.

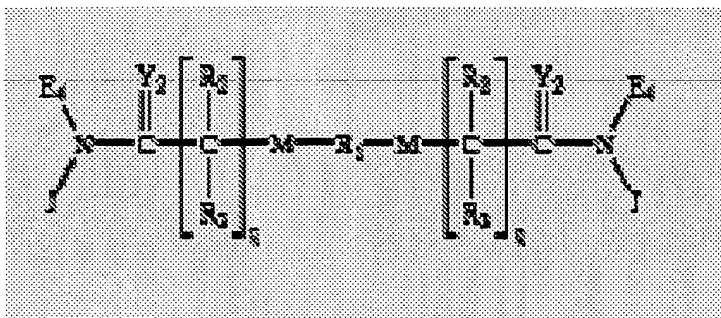
***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

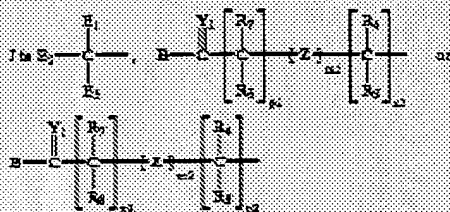
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 6-13, and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Martinez et al. U.S. Patent 6,395,266 (Effective filing date April 16, 1999). The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. Martinez teaches a compound comprising the formula (claim 1, column 30):

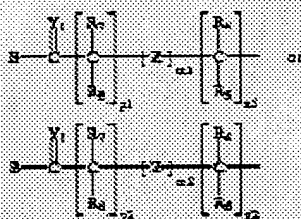
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wherein:



$E_{1-4}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-6}$  branched alkyls,  $C_{3-6}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-6}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy,  $C_{1-6}$  heteroalkoxy, and at least one of  $E_{1-4}$  is



wherein H is a leaving group, OH, a residue of a hydroxyl-containing moiety, a residue of an amine-containing moiety or



wherein  $J_1$  is the same as J, or another member of the group defining J and  $E_4$  is the same as  $E_{1-4}$ , or another member of the group defining  $E_{1-4}$ ;

$Y_{1,2}$  are independently O, S or  $NR_4$ ;

M is a heteroatom selected from either X or Q; wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from  $C(Y_2)$ ;

$R_{1-2}$  and  $R_{3-4}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-6}$  branched alkyls,  $C_{3-6}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-6}$  substituted cycloalkyls, aryls, substituted aryls,

aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

(m1) and (m2) are independently zero or one;

(n1), (n2), (p1), (p2) and (q) are independently zero or a positive integer;

Z is an electron withdrawing group; and

R<sub>5</sub> is a polymeric residue of a substantially non-alkenyl polymer having a molecular weight of at least about 20,000 Daltons.

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Specifically if  $q$  equals 0 in the claimed compound from Martinez et al. the compound would be the same compound claimed in claim 2 and 3 of the present application when  $a$  equals 0 (**claim 1, 2, 3, 4**). The polymeric compound (claim 1, column 30) from Martinez et al. wherein R1 comprises a polyalkylene oxide residue (claim 11, column 32; **claim 6**), wherein said polyalkylene oxide residue comprises polyethylene glycol (claim 12, column 32; **claim 7**). The polymeric compound from Martinez et al. teaches a polymeric residue of a substantially non-antigenic polymer having a molecular weight of at least about 20,000 Daltons (claim 1, column 32; **claims 8, 9, 10, 11**). The polymeric compound from Martinez et al. that has a leaving group B which contains a residue of an amine-containing moiety (claim 1, column 30-31; **claim 12**). The amine-containing moiety can be selected from a group that contains cytosine arabinoside (claim 14, column 32; **claim 13**). Martinez teaches a method of preparing a polymeric transport system. Specifically, Applicants are referred to claim 18.

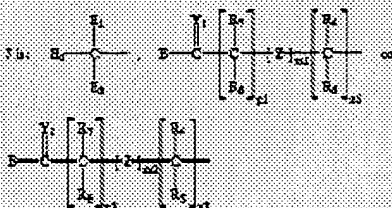
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18. A method of preparing a polymeric transport system, comprising

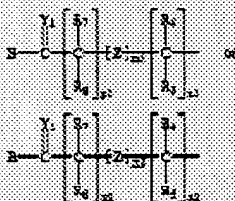
- a) reacting a sufficient amount of a biologically active moiety having a substitutable hydroxyl or amino group with a compound of the formula:



wherein  $B_3$  is a cleavable protecting group,



$B_{1,2}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyl,  $C_{3-12}$  branched alkyl,  $C_{3-6}$  cycloalkyl,  $C_{1-6}$  substituted alkyl,  $C_{3-6}$  substituted cycloalkyl, aryl, substituted aryl, aralkyl,  $C_{1-6}$  heteroalkyl, substituted  $C_{1-6}$  heteroalkyl,  $C_{1-6}$  alkoxy, phenoxy,  $C_{1-6}$  heteroalkoxy,



and at least one of  $E_{1,2}$  includes a B moiety, wherein B is a leaving group, OH, or



wherein  $J_1$  is the same as  $J$ , or another member of the group defining  $J$  and  $E_2$  is the same as  $E_{1,2}$  or another member of the group defining  $E_{1,2}$ .

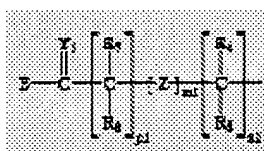
- $Y_1$  is O,S, or  $NR_{1,2}$ ;  
(a)  $R_{1,2}$  and  $R_{3,4}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyl,  $C_{3-12}$  branched alkyl,  $C_{3-6}$  cycloalkyl,  $C_{1-6}$  substituted alkyl,  $C_{3-6}$  substituted cycloalkyl, aryl, substituted aryl, aralkyl,  $C_{1-6}$  heteroalkyl, substituted  $C_{1-6}$  heteroalkyl,  $C_{1-6}$  alkoxy, phenoxy, and  $C_{1-6}$  heteroalkoxy;  
(m1) and (m2) are independently zero or one,  
(n1), (n2), (p1), and (p2) are independently zero or a positive integer; and  
(Z) is an electron withdrawing group, with a biologically active moiety having a hydroxyl or amine group;  
b) deprotecting the resultant intermediate by removing  $B_3$ ; and  
c) reacting the deprotected intermediate compound with a compound of the formula



wherein

- $B_1$  is a leaving group which is capable of reacting with an unprotected amine;  
 $Y_2$  is O,S, or  $NR_{1,2}$ ;  
 $q$  is independently zero or a positive integer;  
 $R_{1,2}$  are selected from the group consisting of hydrogen,  $C_{1-6}$  alkyl,  $C_{3-12}$  branched alkyl,  $C_{3-6}$  cycloalkyl,  $C_{1-6}$  substituted alkyl,  $C_{3-6}$  substituted cycloalkyl, aryl, substituted aryl, aralkyl,  $C_{1-6}$  heteroalkyl, substituted  $C_{1-6}$  heteroalkyl,  $C_{1-6}$  alkoxy, phenoxy, and  $C_{1-6}$  heteroalkoxy;  
 $M$  is a heteroatom selected from either X or Q; wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from  $C(=Y_2)$ ; and  
( $R_1$ ) is a polymeric residue.

The method of reacting a compound that contains a biologically active moiety having a suitable hydroxyl or amino group with a compound, identified in Martinez et al. as formula IX (column 39, line 20), that contains a cleavable protecting group, where



specifically  $J$  is

(column 40, line 21) and  $E_4$  is hydrogen (column 39, line 41-42), then deprotecting the

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resultant intermediate by removing the cleavable protecting group (column 40, line 26-27), reacting the deprotected intermediate compound with a polymeric compound containing a leaving group capable of reacting with an amine group (column 40, lines 28-54) teaches a method of preparing a polymeric transport system (**claim 15**).

Martinez et al. claims a method of preparing a polymeric transport system comprising reacting a sufficient amount of a biological active moiety having a suitable hydroxyl or amino group with a compound that contains a cleavable protecting group (claim 18a, column 39), deprotecting the resultant intermediate by removing the cleavable protecting group (claim 18b, column 40), and reacting the deprotected intermediate compound with a compound that contains a leaving group that is capable of reacting with an unprotected amine (claim 18c, column 40) and forming a polymeric conjugate; Thus it is predictable that a method of preparing a polymeric transport system using a biologically active compound containing an unprotected amino or hydroxyl group (**claim 16**) would be capable of reacting with a polymeric compound containing a leaving group that is capable of reacting with an unprotected amino or hydroxyl group and thereby forming a polymeric conjugate.

Martinez et al. claim a method of treating mammals with prodrugs, comprising administering to a mammal in need of such treatment an effective amount of a polymeric prodrug composition wherein a residue contains a biologically active moiety (claim 19, column 40; **claim 17, 18**).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand U Desai whose telephone number is (703) 305-4443. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 4:30 p.m..



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on (703) 308-2923. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0198.

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September 8, 2003



  
CHRISTOPHER S. F. LOW  
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